January/February 2006 $5.00

POWERLINE

EGSA

The Voice of the On-Site Power Generating Industry

Powering Our Future

EGSA 2006 Annual Spring Convention Travels to Sarasota, Florida

Fighting Derived Transfer Switches

The U.S. Position

THE STATE OF THE MARKET

EGSA Genset Shipment Survey

Applying Recip Engines

Series Update

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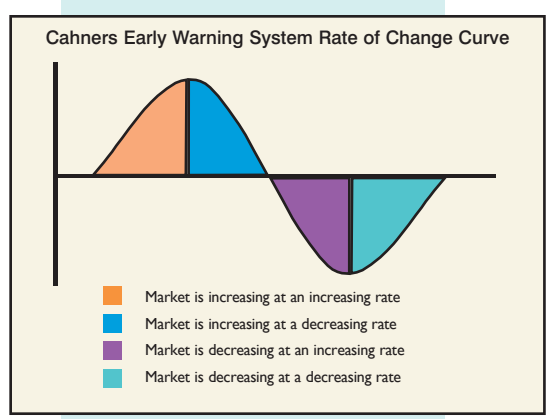

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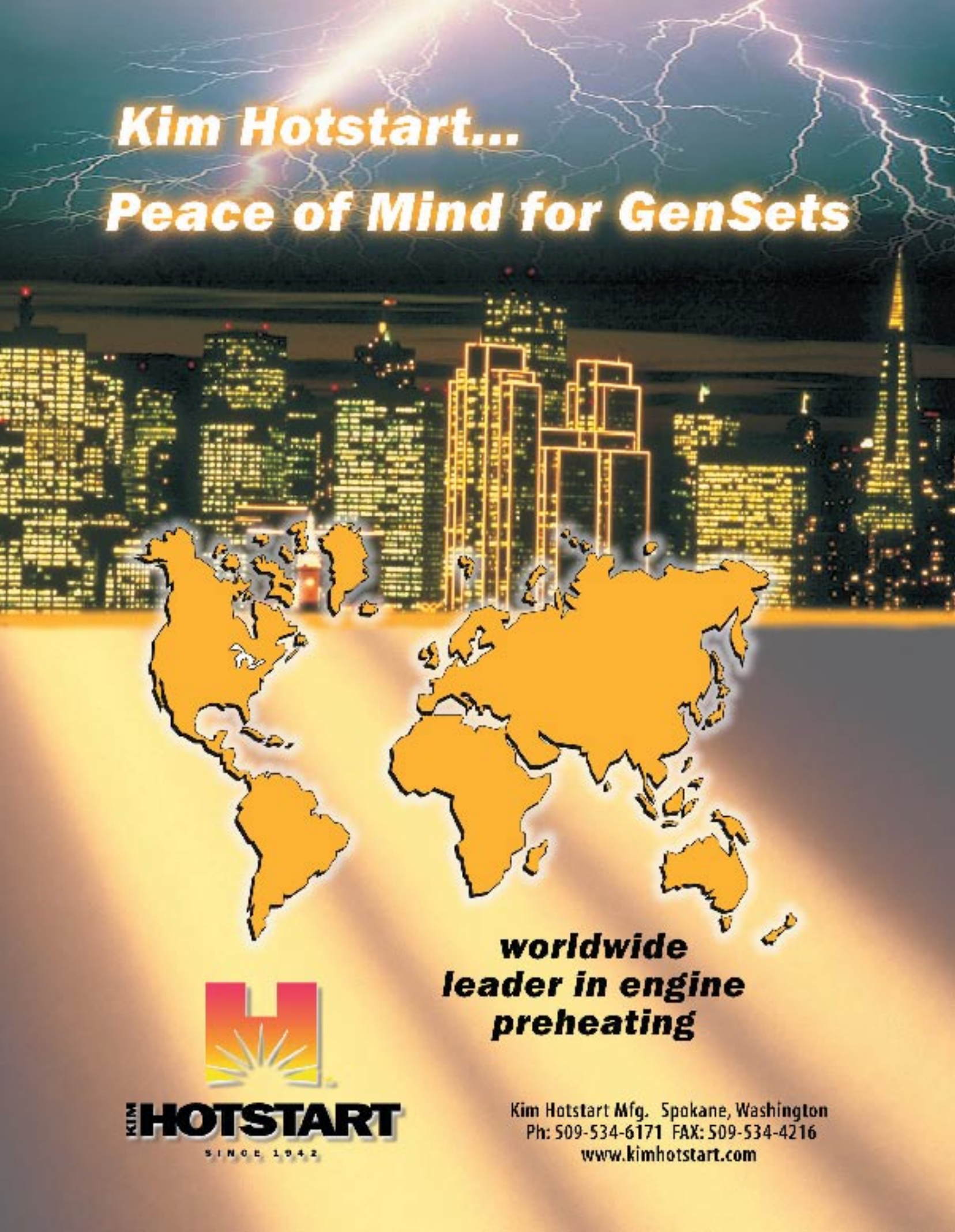
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Opportunities Calendar

EGSA Members: list your meetings here. Fax your information to (561) 395-8557. ✔ — denotes EGSA-sponsored event

Schools

✔ **EGSA On-Site Power Generation School**

May 1-5, 2006 ..... Portland, OR,
July 17-21, 2006 ..... Detroit, MI.
October 23-27, 2006 ..... St. Louis, MO.
Nov. 27-Dec. 1, 2006 ..... Orlando, FL.*

The most complete overview of an On-Site Electric Power Generation System available anywhere today. Now offering Continuing Education Units (CEUs)! For information, visit *www.egsa.org* or call (561) 750-5575.

**To be held in concurrence with POWER-GEN International*

Industry Trade Shows

POWER-GEN Renewable Energy

April 10-12, 2006; Las Vegas, NV.

America's premier all-renewables conference and exhibition designed to move renewables into the mainstream of the energy sector. For more information, visit *www.powergengreen.com*

Conferences

✔ **EGSA 2006 Annual Spring Convention**

March 19-21, 2006; Sarasota, FL.

Speakers will cover the business and technical aspects of On-Site Power Generation as well as the latest industry trends. For more information, visit *www.egsa.org* or call (561) 750-5575.

✔ **EGSA 2006 Annual Fall Technical & Marketing Conference**

September 17-19, 2006; Palm Springs, CA.

Speakers will cover the business and technical aspects of On-Site Power Generation as well as the latest industry trends. For more information, visit *www.egsa.org* or call (561) 750-5575.

2006 Wind Energy Conference & Exhibition

February 27-March 2, 2006; Athens, Greece

Europe's premier wind energy event for up-to-date and relevant information on business, policy, science and technology. For information, visit *www.ewec.info*

More industry events may be found in our up-to-date calendar on the web at *www.egsa.org*

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Service Information

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Powerline is published six times per year on a bi-monthly basis. Articles and information submitted for publication should be forwarded to the attention of the Editor at the address above 30 days prior to publication. Technical articles and articles of general interest to the electrical generation industry are actively sought and encouraged. *Powerline* reserves the right to limit information appearing in its pages to that which, in its sole discretion, will reflect positively on EGSA and the industry which it serves.

Electrical Generating Systems Association
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e-mail@egsa.org • *www.egsa.org*

From the Top

Dale Slemp, 2006 EGSA President

Hitting the Ground Running

It is a great honor to serve as your 2006 EGSA President. On behalf of EGSA's membership, I'd like to thank Past President Ray Kacvinsky and the entire EGSA Board of Directors for their leadership and great contributions to the organization over the past year.

I'm sure you'll agree that last year—our 40th Anniversary year—was a milestone in many regards for our organization. It was a watershed event in our history and one of the most successful years we've ever had, which makes it all the more important that we "hit the ground running" as we begin 2006.

Over the past several years the EGSA Board of Directors has made a serious commitment to increase the value of EGSA membership primarily through educational programs. In the past year, these efforts have begun to blossom and bear fruit.

The On-Site Power school program is stronger than ever. We continue to sell out schools around the country, and now we've added a Continuing Education Unit (CEU) program to allow those attending to earn credits that can help them maintain professional accreditations and/or licenses.

> The Board has made a serious commitment to increase the value of EGSA membership.

We have launched the industry's first On-Site Power Generator Technician Certification Program. Manufacturers and end-users can now have peace of mind knowing that expensive equipment is being serviced by qualified, certified personnel; Distributor/Dealers can now market their services as such and distinguish themselves from their competition.

Thanks to last year's reorganization, our committees are more vibrant and active than ever monitoring standards, planning conferences, mapping out educational programs and surveying the needs of the general membership.

In short, EGSA stands on the brink of another 40 years of outstanding service as the voice of the On-Site Power industry. There are many exciting things in store this year. Make sure you make the most of every opportunity to participate. I'll see you in Sarasota at the Spring Convention! ■

The most complete overview of an On-Site Electric Power Generation System you can find anywhere today!

EGSA On-Site POWER GENERATION Schools

Now Offering CEUs!

EGSA's On-Site Power School is coming to these cities!

Portland, OR
May 1-5, 2006

•

Detroit, MI
July 17-21, 2006

•

St. Louis, MO
October 23-27, 2006

•

Orlando, FL
November 27-December 1, 2006

EGSA Electrical Generating Systems Association

Electrical Generating Systems Association
The Voice of the Global On-Site Power Industry for over 40 years
1650 S. Dixie Highway, Suite 500, Boca Raton, FL 33432
561/750-5575 Fax 561/395-8557 *e-mail@egsa.org*
Visit us online at *www.egsa.org*

George Rowley, EGSA Director of Education

Technician Certification Update

We are pleased to provide a brief update on our new Electrical Generator Systems Technician program. The pilot testing phase of the program has been completed and those who took the test have been given their test results. The test was designed to measure proficiency of technicians that have knowledge of the electrical and mechanical components of a gen-set, have solid knowledge of genset installation, maintenance and repair, and have three or more years of field experience. Judging by preliminary results, the test performed to expectations. 60 technicians took the test; 20 had one year of experience or less, 20 had between 1 and 5 years, and 20 had more than five years experience. Overall, about half of those who took the pilot test passed it. Technicians that pass the test (with a score of 75% or more) will be certified for a period of 5 years and will receive a certificate, a wallet card, and a complimentary uniform patch (see above).

Please visit *www.egsa.org* where you will find extensive information about the program and application procedures.

Member Expertise Needed for The EGSA Reference Book

"On-Site Power Generation–A Reference Book," the big blue book published by EGSA, is generally considered to be the industry's bible and is extensively used by industry personnel as a source of information and for training. Since publication of the 4th Edition five years ago, new technologies have been introduced to our industry and it is time for an update. We want to ensure that the 5th Edition is of the highest quality and meets as many needs as possible. Therefore, we have launched several initiatives to begin preparing for publication of the 5th Edition. If you haven't received or responded to our e-mailed requests for assistance, we once again ask for your opinions and ideas. The book will be discussed extensively at the Education Committee meeting at the Spring Convention and all are invited to contribute to those discussions.

We have listed the Sections and Chapters of the 4th Edition below in hopes that it will be helpful to you as you decide to offer assistance.

5th Edition Format, Content Survey

Recently, EGSA members were sent an e-mail message asking them to complete an on-line survey about general aspects of the book including ideas and opinions about format and content for the 5th Edition. If you did not receive or complete this survey but would like to do so now, please contact George Rowley at EGSA.

Reviewers for 4th Edition Chapters

We seek knowledgeable people in the industry to review chapters and content in the 4th Edition to identify necessary changes. The mission will be to identify portions that may be considered "old technology" (information to be retained but perhaps be made available in another format), and to identify new technologies that are appropriate for inclusion in the 5th Edition. We plan to form Chapter Review Sub-committees for each chapter of the Book.

Reviewers and Potential Authors for 5th Edition Chapters

In addition, we seek individuals who are interested and able to serve as reviewers and, potentially, authors for the 5th Edition. We plan to have several reviewers for each chapter and we urge you to contribute to the book and profession by serving in this capacity. We developed an Author Selection Process for the 4th Edition and we expect that this process will be used more extensively for the 5th Edition.

If you can contribute to the 5th Edition in any of the ways described, please provide EGSA with your name, contact information, and chapter(s) of interest. For more information or to volunteer, e-mail *g.rowley@egsa.org* or call 561-750-5575 x 210. ■

On-Site Power Generation– A Reference Book

Section 1- Prime Movers and Other Energy Sources: Liquid Cooled Spark-Ignited Engines; Air Cooled Spark-Ignited Engines; Liquid Cooled Diesel Engines; Air Cooled Diesel Engines; Gas Turbines; Other Power Generation Technologies.

Section 2 - Generators: Electrical Fundamentals; Alternators (Synchronous Generators); Induction Generators; Permanent Magnet Generators; Inverters.

Section 3 – Circuit Breakers, Switchgear, and Automatic Transfer Switches: Circuit Breakers; Generator Switchgear; Automatic Transfer Switches; Static Automatic Transfer Switches.

Section 4 - Controls and Monitoring Systems: Governor Fundamentals; Automatic Voltage Regulators; Engine Protective Controls; Control & Monitoring Systems.

Section 5 - Auxiliary Equipment: Fuel Systems, Diesel; Fuel Systems, Gaseous; Cooling Systems, Liquid; Engine Exhaust Systems; Exhaust Silencers; Vibration Isolation; Sound Attenuation; Batteries and Battery Chargers; Load Banks.

Section 6 - Applications: Torsional & Bending Vibration-Induced Failures in Rotating Machines; Vibration Analysis for a Sound Generator Set Design; Design Considerations for Standby Power System Environmental Enclosures; Cogeneration Systems; Generator & System Grounding; Emergency; Standby, and Prime Power Applications; Cogeneration; "Nine 9's" Premium Power; Interconnection of On-Site Synchronous Generation with the Electric Power Utility.

Section 7 - Emissions: Exhaust Emissions.

Section 8 – Troubleshooting: Troubleshooting On-Site Power Generation Systems.

Codes and Standards

Herb Whittall, EGSA Technical Advisor

NFPA is Looking for Power Professionals to Serve on Committees

As I noted during my presentation on Standards at the EGSA Fall Convention, when you look at the number of people who actually write the standards that in many ways control our lives, they are actually very few in number. Right now the NFPA 99, *Standard for Health Care Facilities*, which influences many standby generator set operations, is looking for members for many of their committees. For example, Electrical Systems—on which both Herb Daugherty and I serve—is looking for members in all categories except special experts and users. NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines* is looking for members in the category of users.

I recently visited the International Code Council (ICC) web site to download an Application Form. I am applying to become a member of the International Fire Code for the next cycle, which starts in July 2006 and runs through December 2007. The ICC document is much longer than the NFPA document and requires a lot of background.

NFPA 70,*The National Electrical Code*, is in a new cycle for the 2008 edition. The 2005 edition was the 50th edition of this document. Proposals for changes to the 2005 edition closed on November 4, 2005. The proposals were then mailed out to members on December 9, 2005. Members of the various committees are meeting in Hilton Head, SC to review the applicable proposals to our panel from January 9-21. The panel I serve on—panel 13, Electrical Systems—meets from January 16 to January 21.

We then get a ballot to vote on what we accomplished on January 27 and have to return it by February 23. A Report on Proposals (ROP) is then printed and available to the public for comments on July 14, 2006. The comments are due by October 20, 2006. The codemaking panels are scheduled to meet again between November 28 and December 9, 2006 and review all the comments on the ROP. In March 2007, a *Report on Comments* (ROC) will be made available to the public. The NFPA Annual Meeting is scheduled for June 3-7, 2007 and the final document will then be voted on by the NFPA membership.

Finally, the NEC for 2008 will be released in September 2007. A long and wordy process, but nonetheless one that gives all parties a voice in the standards process and meets ANSI requirements for recognition as an American National Standard.

At the EGSA Codes and Standards Sur-

Continued on page 34

EGSA Committees and Council


RON HARTZEL

Codes & Standards Surveillance Committee

Ron Hartzel, Chairman
Eaton Electrical
412/494-3462 Fax 412/494-3749
rondhartzel@eaton.com

Promote EGSA representative membership on all related national industry codes and standards committees. Provide action where requested and needed on recommendations for Industry Codes and Standards.


LEO LEBLANC

Communications & Convention Committee

Leo LeBlanc, Chairman
Nixon Power Services Company
704/588-1043 Fax 704/588-8373
lleblanc@nixonenergy.com

Develop content for the Association's conventions and publications, with primary emphasis on appealing to all membership categories.


JOE HAFICH

Distributor/Dealer Council

Joe Hafich, Chairman
Emergency Systems Service Company
215/536-4973 Fax 215/536-7413
joeh@emergencysystems-inc.com

Develop and recommend programs and methods to the Board of Directors for involving and addressing the specific needs of Distributor/Dealers.


MICHAEL POPE

Education Committee

Michael Pope, Chairman
Sud-Chemie, Inc.
781/444-5188 x34 Fax 781/444-0130
Michael.Pope@sud-chemie.com

Develop and monitor training courses, oversee the On-Site Power Schools curricula and performance, and implement new educational programs. Develop an updated and improved 5th Edition of *On-Site Power Generation–A Reference Book* with guidance and input from the EGSA membership.


RAY WOOD

Government Relations Committee

Raymond B. Wood, Chairman
Technology Research
727/535-0572 Fax 727/535-4828
rwood@trci.net

Establish liaison with the Military and report to the Market Trends Committee on all matters and requirements as they relate to or affect present and future electrical generating systems, ground support, load banks, distribution and environmental equipment performance and usage.


DICK OLSEN

International Trade Committee

Dick Olsen, Chairman
Marathon Electric Mfg. Corp.
715/675-8262 Fax 715/675-8026
intlman1@aol.com

To periodically analyze the world market for equipment and services provided by the EGSA membership and to monitor and forecast economic and political trends that would affect this trade. To promote export programs, participation in trade shows and an increasing involvement in international trade by EGSA members.


LES CASTERLINE

Marketing Trends Committee

Les Casterline, Chairman
BAY-SAN Company Inc.
262/548-6200 Fax 262/548-6239
lesc@fpevalves.com

Develop and recommend programs and methods to the Board of Directors for compilation of statistical information on the engine generator set industry. To enhance marketing knowledge of trade, product sales, growth rate, and statistical data required to assist contributing Association members to accomplish their objectives.


CHARLES HABIC

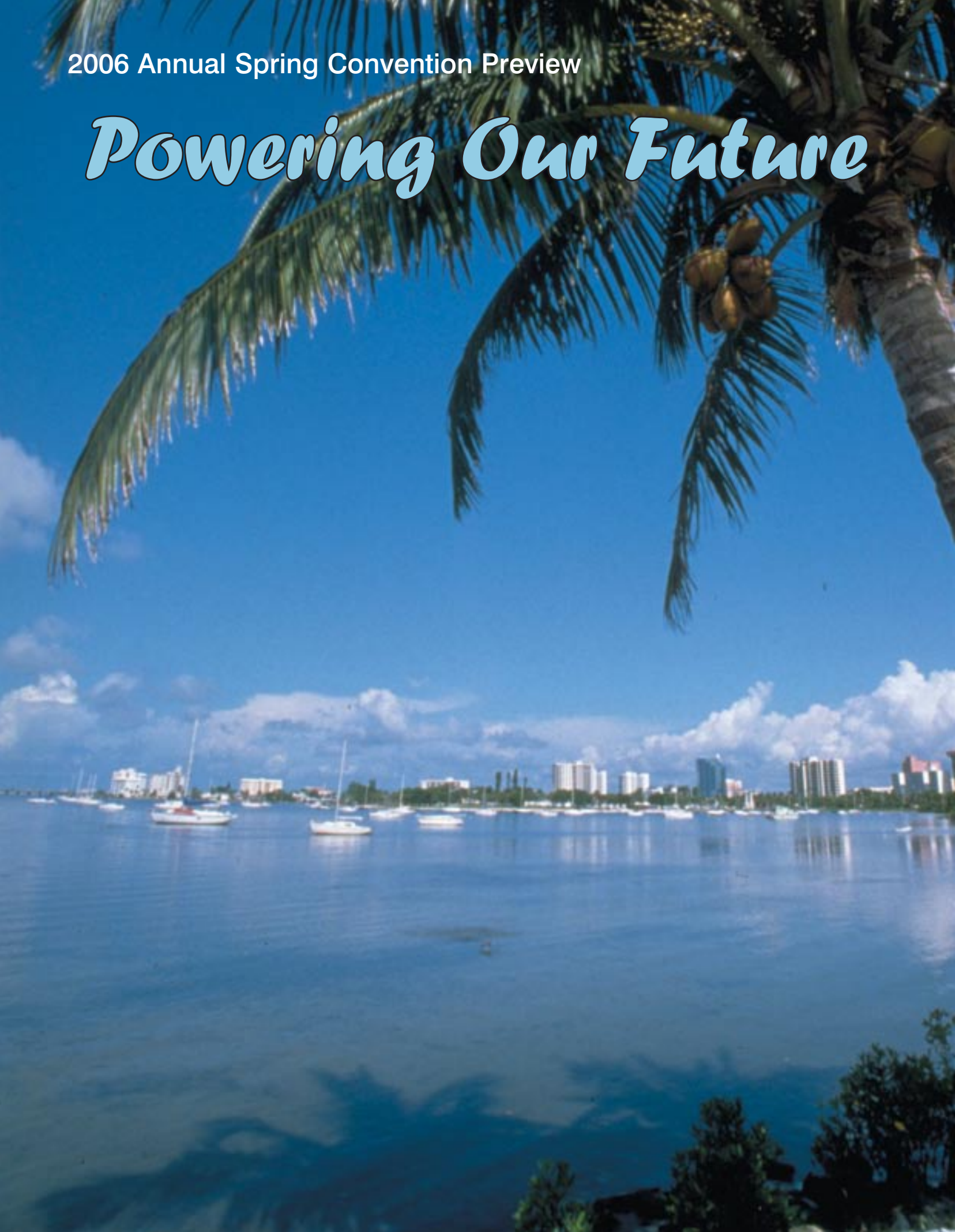
Membership Committee

Charles Habic, Chairman
Gillette Generators
574/264-9639 Fax 574/262-1840
crhabic@gillettegenerators.com

Market the Association to new members and promote membership retention. Create means of interesting industry firms in becoming members and in being active in the organization. Responsible for making new members feel a part of the organization.

2006 Annual Spring Convention Preview

Powering Our Future



On-Site Power professionals will soon head south and converge on Sarasota, FL for EGSA's 2006 Annual Spring Convention to be held March 19-21 at the Hyatt Sarasota on Sarasota Bay. The Association's Communications and Conventions Program Committee has assembled an engaging and informative two-day program sharply focused on the future of the On-Site Power industry.

"The 2005 hurricane season disrupted oil and gas supplies in the Gulf states and southeast U.S. and left a lot of destruction behind. In many of these areas, On-Site Power made a real difference in a lot of people's lives. There's a renewed interest in On-Site Power, and On-Site Professionals want to be prepared for the industry's next growth period," says EGSA Executive Director Jalane Kellough. "As a result, they are actively seeking out as much information as they can on what their next, best business opportunity could be along with the strategies they will need to employ to navigate today's challenging markets. This year's convention program is specifically designed to provide attendees with a look at the future so they can plan accordingly."

In addition to receiving some of the latest market trends and data, attendees also will enjoy ample opportunity to visit with some of their most important suppliers in the EGSA Manufacturer's Showcase. A high point of every conference and convention, the showcase features table top displays of product literature, magazines and product samples. Throughout the course of the convention, attendees will enjoy many opportunities for business networking, committee work and recreational activities during which they will work—and play—side by side with the industry's top players.

Convention registration information has already been mailed. Visit EGSA online at *www.egsa.org* or call EGSA Headquarters at (561) 750-5575 to register today. ■

Editor's note: turn to page 14 for a complete overview of the Spring Convention educational sessions.

2006 Annual Spring Convention

Manufacturers Showcase Exhibitors*

ASCO Power Technologies
Chillicothe Metal
ComRent
Deep Sea Electronics
FW Murphy
Girtz Industries
GTI Altronic
IEA, Inc.
MC Electronics
Precision Governors
Pritchard Brown
Robinson Custom Enclosures
SDMO Generating Sets
SENS Stored Energy Systems
Silex Innovations
Sud Chemie
Woodward Governor

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**as of 1/6/06*

Hyatt Sarasota on Sarasota Bay

1000 Boulevard of the Arts, Sarasota, FL 34236-4898
Phone: 941-953-1234 Fax: 941-952-1987

Hyatt Sarasota's oasis of lush gardens, sparkling blue water and relaxed elegance combines with the year-round temperate climate of Sarasota Bay to set the ideal backdrop for a perfect destination. Situated on the water in the heart of Florida's Cultural West Coast, the Hyatt Sarasota provides easy access to the many sights and sounds of Sarasota's Arts District. Reach the breathtaking white-sand beaches in just minutes. Enjoy spectacular views of legendary Gulf Coast sunsets, Hyatt's private marina and the Sarasota Quay.

To make your hotel reservation, call 941-953-1234 or 800-233-1234. Please reference EGSA (Electrical Generating Systems Association) when you make your reservation to ensure that you receive the Association's discounted rate.

The room rate is $185.00 single/double per night, plus tax (currently 9%). This rate is available from Tuesday, March 14 through Saturday, March 25, 2006. The deadline for hotel reservations is February 17, 2006. After this date, reservations will be accepted on a space and rate availability basis.

All reservations must be accompanied by one night's deposit plus tax or guaranteed by a major credit card. Deposits are only refundable for cancellations made three days prior to arrival.

Educational Session Descriptions

Stan Pukash

Demand for Reliable Power Goes Global

Stan Pukash, Vice President International Sales, ASCO Power Technologies

The "wave of industrialization" of the world's emerging economies is driving the demand for reliable power. As these economies struggle to improve poor utility power infrastructures, many local users must install on-site generation and switchgear. Converting these opportunities means understanding the market dynamics that are specific to each region. The discussion will present a broad overview of the global market for reliable power.

Stan Pukash is Vice President, International Sales at ASCO Power Technologies. In his current position, Stan is focusing on the international markets for emergency power equipment. He is a member of UL's Standards Technical Panel 67, technical advisor to IEC Subcommittee 17BWG2, member of NFPA 110 Standard for Emergency and Standby Power Systems committee, and chairman of NEMA Subcommittee 16, all of which are concerned with the safety and reliability of electrical equipment. Stan received a BSEE degree from the New Jersey Institute of Technology and an MBA from Rutgers University.

Catastrophic Hurricanes and Our Changing Climate

Daniel Noah, Warning Coordination Meteorologist, National Weather Service

Extreme weather seems to be on the rise in the U.S. over the last decade. The last two hurricane seasons have been record breaking. Hurricane Katrina was an extraordinarily powerful and deadly hurricane that carved a wide swath of catastrophic damage and inflicted large loss of life. It was the costliest and one of the five deadliest hurricanes to ever strike the U.S. This multimedia presentation will explore how climate change and rising water temperatures may be affecting extreme weather, especially the hurricanes of the last two years.

Daniel Noah has been with the National Weather Service for 17 years and is currently the Warning Coordination Meteorologist for the Tampa Bay office.

FEMA – Disaster Preparedness

Kenneth O. Burris, Jr., Regional Director-Region 4, Federal Emergency Management Agency (FEMA)

In the aftermath of disaster, the restoration of electric power to businesses and homes can be one of the most prolonged and frustrating experiences. Parts of New Orleans, for example, are still without power—months after Hurricane Katrina devastated the Gulf Coast region. Good planning before a disaster strikes can not only ease later difficulties, it can save lives.

Consulting Engineer Perspective – Construction Trends

Speaker To Be Announced

The U.S. is currently undergoing a resurgence in commercial construction that is challenged by the availability of concrete and other essentials. Hear how consulting engineers are balancing customer requirements and the vagaries of supplies while building national data centers.

Michael Broome

New Session - Luncheon Keynote

You and America – Two Great Champions

Michael Broome, President, Broyhill Leadership Conferences

Any thoughtful American is aware that our country and many corporations face serious challenges. Downsizing is common, competition is increasing, energy costs are high, and we are asked to accomplish more with fewer people. The media seems to be focused on all that is wrong and very little that is right.

Instead of dwelling obsessively on problems, Mike goes beyond them to offer a realistic counter-vision blending hope and confidence…loaded with humor. You will be taught the importance of learning from adversity, setting specific objectives, and maintaining a vision. The central conviction behind Broome's presentation is that success is achieved by teaming with and by serving others.

Michael Broome has over 20 years experience as a professional speaker. He is the founder and President of the Broyhill Leadership Conferences, which teach the principles of success. Michael is a graduate from Appalachian State University, where he majored in leadership.

Continued on page 16

Conference Schedule At-a-Glance

Sunday, March 19

10:00 a.m. - 12:00 p.m.
Registration Desk Open

12:15 - 3:30 p.m.
John and Mable Ringling Museum Tour

4:00 - 6:00 p.m.
Registration Desk Open

5:00 - 6:00 p.m.
First-Timers/New Members Reception

5:00 - 6:00 p.m.
Distributor/Dealer Reception

6:00 - 7:30 p.m.
President's Reception

7:30 - 9:00 p.m.
Manufacturers Showcase Setup

Spouse/Guest Activities

Sunday, March 19

12:15 - 3:30 p.m.
John and Mable Ringling Museum Tour

6:00 - 7:30 p.m.
President's Reception

Monday, March 20

8:00 - 9:00 a.m.
Spouse/Guest Continental Breakfast

10:00 a.m. - 3:00 p.m.
St. Armands Circle (Spouse Tour)

6:30 - 9:30 p.m.
Awards Reception and Banquet**

Tuesday, March 21

8:00 - 9:00 a.m.
Spouse/Guest Continental Breakfast

7:00 - 8:30 p.m.
Closing Reception aboard *The Lady Sarasota* sponsored by the Hyatt

Monday, March 20

7:00 - 8:00 a.m.
Manufacturers Showcase Setup

7:00 a.m. - 11:45 a.m.
Registration Desk Open

8:00 - 9:00 a.m.
Manufacturers Showcase/
Continental Breakfast

9:00 - 9:15 a.m.
Opening Remarks

9:15 - 10:00 a.m.
Global Demand For Reliable Power

10:00 - 10:30 a.m.
Manufacturers Showcase/
Refreshment Break

10:30 - 11:00 a.m.
Catastrophic Hurricanes
and Our Changing Climate

11:00 - 11:45 a.m.
Disaster Preparedness

12:00 - 1:00 p.m.
Welcome Lunch

1:00 - 1:45 p.m.
You and America—
Two Great Champions

2:00 – 5:00 p.m.
Committee Meetings
Communications & Conventions
Education
Membership
International Trade
Government Relations
Codes & Standards Surveillance
Market Trends
Distributor/Dealer Council

6:30 - 9:30 p.m.
Awards Reception and Banquet**

Tuesday, March 21

7:30 a.m. - 12:00 p.m.
Registration Desk Open

7:30 - 8:30 a.m.
Continental Breakfast/
Manufacturers Showcase

8:30 - 9:15 a.m.
Consulting Engineer Perspectives

8:30 - 10:00 a.m.
Exhibitor Teardown
Manufacturers Showcase

9:15 - 10:00 a.m.
Online Power Generation
and the IBC Requirements

10:00 - 10:15 a.m.
Refreshment Break

10:15 - 11:00 a.m.
Reducing Nox Emissions

11:00 - 11:45 a.m.
Electronic Engine Control

1:00 - 5:00 p.m.
Golf Tournament

7:00 - 8:30 p.m.
Closing Reception aboard *The Lady Sarasota* sponsored by the Hyatt

The Lady Sarasota, Hyatt's 92-foot luxury yacht, will board starting at 7:00 p.m. She will set sail at 7:30 p.m. from the hotel's own slip on Quay Basin and sail around beautiful Sarasota Bay, taking in the sights from the water. Plenty of windows allow for excellent scenic viewing. The yacht will return to the hotel at 8:30 p.m.

Requested Attire

The EGSA Board of Directors has requested "Business Casual" attire for the 2006 Annual Spring Convention except for those events marked with ** *(Jacket and tie for men, cocktail attire for ladies.)*

Activity Key

Networking Opportunity | Educational Session | Manufacturers Showcase | Optional Tour

Educational Session Descriptions

Richard C. Berger

Requirements for "On-Line" Emergency Power Generation in Accordance with the International Building Code (IBC)

Richard C. Berger, Chairman, The VMC Group

With most states adopting the International Building Code (IBC 2000/2003), there are new seismic requirements with which equipment manufacturers must comply. This presentation will highlight the requirements for the new code and the responsibilities of equipment manufacturers and suppliers. How these codes are being enforced and specific scenarios where seismic design must be implemented also will be discussed.

Equipment manufacturers, contractors, designers and building code officials now have a tremendous new burden that must be clearly understood if a building is to be properly constructed to these standards. By far, the most far reaching and important aspect of all of the above is the furnished proof by the component manufacturer (especially emergency generator systems) that the unit and all its associated components—including electrical connection, fuel supplies and exhaust systems—prove "on-line" performance before, during and after an event.

Richard Berger is a partner in VMC East, a sales agency for vibration and seismic control systems, and Chairman of The VMC Group, a global leader in vibration isolation products and engineering. He is the designer of several patented vibration and seismic control products that profoundly advanced industry performance and efficiency. Richard is the author of "*A Seismic Guidebook, A Multi-State Training Manual for Non-Structural Building Components,*" and he is a certified AIA/CES registered provider.

The Simultaneous Reduction of NOx, PM, HC, and CO from Large Stationary Diesel Engines Using SCR and Particulate Filters

Mike Wyatt, Ph.D., Principal Staff Scientist, Johnson Matthey Catalysts

This presentation is a case study in the simultaneous reduction of NOx, PM, HC and CO from two large stationary diesel engines driving two 2 MW generators located in the South Coast Air Quality Management District in California. The required reductions are 85% of the PM, 25% of the HC, 50% CO, and 95% NOx with a maximum of 10 ppm ammonia slip.

Dr. Mike Wyatt was educated in the United Kingdom at the University of Birmingham in England. Soon afterwards he joined Johnson Matthey, where he has been employed for 35 years. During that period he has worked on many aspects of catalysis, including controlling the emissions of diesel engines, gasoline engines, fuel cells and the chemical process industry. He currently holds the position of Principal Staff Scientist in the Stationary Source Emission Control Division, with interests covering the engine industry from lawn mowers to large gas turbines.

Libor Mertle

Gen-set Controllers for Electronic Engines

Libor Mertl, Managing Director and Senior Partner, ComAp s.r.o.

This presentation will discuss recent advances in engine, generator, and parallel switchgear controls as they relate to the new generation of electronic engines. Engine automation, generator protection, paralleling, synchronizing, and communication functions also will be discussed along with the advantages this technology offers for state-of-the-art controllers. The "all-in-one approach" to control systems can simplify HMI and improve communication capabilities, reliability and cost efficiency. New electronic engines require different levels of control systems. Communication among separate units and between "home base" and remote sites is a vitally important feature for the future as controlling gensets becomes an increasingly sophisticated task.

Libor Mertl is Managing Director and Senior Partner of ComAp s.r.o., a leading electronics manufacturer based in the Czech Republic. Libor received his ING (M.Sc) degree in Technical Cybernetics from Faculty of Electrical Engineering, Czech Technical University in Prague in 1989. In 1990 he and his partners established ComAp electronic controls company.

Convention Tours Offer a Taste of the 'High Life' With Upscale Shopping and Visit to Former Ringling Estate

At the turn of the 20th Century, Sarasota and much of Florida's Gulf Coast enjoyed a reputation as the winter hideaway of the well-to-do. As a result, the area is home to one of the most unusual and spectacular homes in the country: the former John and Mable Ringling Estate. Located on 66 acres, the estate is now maintained as a legacy with the John and Mable Ringling Museum of Art, Circus Museum and Mable Ringling Rose Garden open to the public.

Visitors may tour the incredible Cà d'Zan ("House of John") and browse through the Circus Museum displays of costumes, wagons, performance equipment, and other artifacts chronicling Ringling Circus history. Mable Ringling's Rose Garden, completed in 1913, is set amongst beautifully landscaped grounds overlooking Sarasota Bay. The Museum of Art boasts one of the finest collections in the southeastern U.S. with 21 galleries of European paintings, Cypriot antiquities, Asian Art, American paintings and contemporary art. Included on the estate are the Banyan Café, two gift shops, and acres of parkland and gardens with Banyan and palm trees among the wide variety of native and exotic plant materials.

Cà d'Zan (left), the Rose Garden (top, right), and a view of the grounds of the Ringling Museum (bottom, right). Photos courtesy of the Sarasota Convention & Visitors Bureau.

Shop 'til you drop

If you're not content at just seeing how the other half lives, then perhaps a little upscale shopping is in order. Convention attendees will have an opportunity to visit St. Armands Circle, an island shopping center removed from the bustle of the mainland by two bridges over magnificent Sarasota Bay. Unique in concept, history, and beauty, St. Armands provides an unforgettable experience. Set amidst a tropical paradise, St. Armands is an enchanting circle of fine shops and gourmet restaurants. Renowned as a market place with a continental flavor, it is a charming and graceful synthesis of past and present. Lush tropical plantings, courtyards and patios, antique statuary and contemporary architectural design skillfully contribute to an international atmosphere of friendly warmth, enduring elegance, and timeless style. Relax in the restaurants, explore the shops—from trinkets to treasures, gourmet snacks to candlelight feasts, you'll find it all on St. Armands Circle.

St. Armands Circle. Photo courtesy of the Sarasota Convention & Visitors Bureau.

Closing Reception aboard *The Lady Sarasota* Sponsored by the Hyatt Sarasota on Sarasota Bay

The Closing Reception at this Spring Convention holds a special treat for Convention attendees. The event will be hosted by the Hyatt Sarasota aboard The Lady Sarasota, Hyatt's 92-foot luxury yacht. Attendees will board the yacht starting at 7:00 p.m. and set sail at 7:30 p.m. from the hotel's own slip on Quay Basin. The leisurely evening cruise around beautiful Sarasota Bay will allow attendees to take in the sights from the water before returning to the hotel at 8:30 p.m.

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With our new Continuing Education program, professional engineers can earn up to 3.1 CEUs to help maintain licenses and professional society memberships. When you register, be sure to sign up for the Continuing Education tests.

For complete information on EGSA's On-Site Power Schools (including a schedule and registration materials), and full details on our Continuing Education program, visit us online at *www.egsa.org.*

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Email us at *e-mail@egsa.org*
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EGSA Electrical Generating Systems Association

The State of the On-Site Power Market

2005 EGSA President Ray Kacvinsky, VP Marathon Electric Mfg. Corp., Discusses the *EGSA Quarterly Generator Shipment Survey* Results

By Don Ferreira, Editor

Four times each year, EGSA members receive a copy of the *EGSA Generator Shipment Survey*. The report has become an important industry barometer among many On-Site Power firms in recent years because it is one of the few sources of information on composite shipments of PTO and non-PTO generators. Using data submitted by participating EGSA-member companies, the report details the production and export of generator sets in North America.

In what has become an annual event, Ray Kacvinsky, VP of Marathon Electric and 2005 EGSA President, revisited the topic at the Association's recent Fall Technical & Marketing Conference.

Entitled "The State of the Market," Kacvinsky's presentation explained the intricacies of the reports and provided attendees with some long-term analysis and comparison.

In compiling summary statistics, Kacvinsky has always cautioned his audiences about taking the numbers at face value. At first glance, the EGSA statistics are "erratic and exhibit noise," says Kacvinsky, largely because of the small number of companies participating in the survey. However, with a little clean-up, says Kacvinsky, the survey can provide a wealth of information.

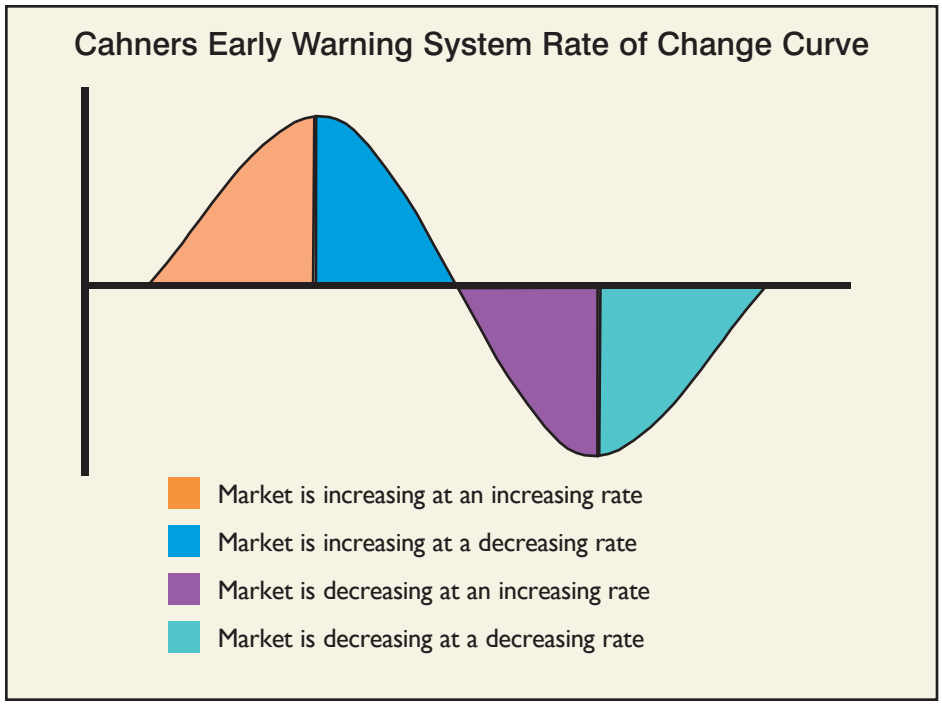
Quick Forecast

Generator size	2005	2006
10-250 kW	+8%	+8%
251-4,000 kW	+11%	+8%

Using a three-quarter moving average and breaking the kilowatt ranges into smaller segments, Kacvinsky was able to show that 2004 clearly marked a turning point in the industry with shipments of small generators (10-250 kW) rising by 25% and large generator shipments (250-4,000 kW) posting an impressive 30% increase.

Turning his hand to forecasting, Kacvinsky employed the Cahners Early Warning System Rate of Change Curve, an economic forecasting tool. By applying the formula to the EGSA statistics, Kacvinsky showed how volatile the market has been recently with "wild swings in the rate of change over the previous three to four years," said Kacvinsky.

"All the curves are in the quadrant of increasing at a decreasing rate and are



projected to have no sales growth at some time in the next six quarters," he said."In order to meet the projections," he added, "we have to be right on the turnaround of the rate of change. The timing of the turnaround and the point of the turnaround are the most difficult to predict."

Kacvinsky was able, however, to provide a glimpse at the market's near future activity. The resulting forecast indicated that small generator shipments (10-250 kW) for 2005 would be up 8% over the previous year. Kacvinsky also predicted that large generator shipments (251-4,000 kW) would post an 11% increase over 2005.

Mike Evans' Power Generation Market Forecast

Year	Growth Rate
2004	5%
2005	8%
2006	8%
2007	5%

To balance his presentation, Kacvinsky referenced data compiled by Mike Evans, one of the country's leading econometricians and a presenter at the 2003 EGSA Fall Technical & Marketing Conference. Evans has forecasted 8% growth for the market in 2006 easing to 5% through 2007.

Kacvinsky concluded his report by assuring his audience that, following "a substantial contraction through 2003, the On-Site Power market has turned." Thanks to "exogenous factors, the need to rebuild Iraq's infrastructure, the strong dollar, Katrina rebuild efforts" and the nation's aging utility grid, On-Site Power should experience 8% growth in 2006 and beyond. ■

The Fight Against 'Derived Transfer Switches'

Stan Pukash, VP International Sales, ASCO Power Technologies, Outlines the U.S. Position Against Relaxing IEC 60947-6-1

By Don Ferreira, Editor

According to its web site, the International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes international standards for all electrical, electronic and related technologies which serve as a basis for national standardization and as references when drafting international tenders and contracts. Through its members, the IEC promotes international cooperation on all questions of electrotechnical standardization and related matters, such as the assessment of conformity to standards, in the fields of electricity, electronics and related technologies.

The IEC's scope of work is quite broad, embracing virtually all electrotechnologies, including electronics, magnetics and electromagnetics, electroacoustics, multimedia, telecommunication, and energy production and distribution, as well as associated general disciplines such as terminology and symbols, electromagnetic compatibility, measurement and performance, dependability, design and development, safety and the environment.

Recently, the IEC proposed changes to its own Standard 60947-6-1 on Automatic Transfer Switches. In short, the rulemaking body proposes relaxing the standard to allow the use of "derived transfer switches," a move the United States is opposing. The subject formed the basis for Stan Pukash's presentation at the EGSA Annual Fall Technical & Marketing Conference last September in Williamsburg, VA.

Stan Pukash

According to Pukash, the proposed changes, if adopted, will have a serious impact on transfer switch manufacturers here and abroad who use the standard as a benchmark to qualify their products. The changes were proposed in June 2002 by the IEC Subcommittee 17B Working Group 2 (WG2), which administers IEC Standard 60947-6-1. The standard was initiated in 1980 and patterned after the requirements of UL 1008.

Power switching operation can affect other components such as wiring and logic controls.

UL 1008 is an important standard for the On-Site Power industry, said Pukash, because it relates to the transfer of power between two dissimilar sources, such as a utility and an engine-generator. UL2200, he noted, required UL1008 transfer switch equipment. Likewise, the National Electrical Code (NEC) specifies that any power transfer between two live sources to a common load requires listing/approval to a transfer switch equipment standard (in this case, UL 1008).

According to Pukash, the changes discussed by the 17B WG2 eventually evolved into a concept called "derived transfer switch equipment" which, said Pukash, "enables avoiding the tests required in the original standard."

Pukash went on to explain that the technical justification that served as the basis of the proposal was that products already qualified to other 60947 standards don't have to be re-tested for transfer switch applications.

However, he added, the U.S. opposes this concept because there is no technical justification to support the notion of "derived transfer switch equipment" that has never been tested for switching a common load between two different power sources.

In September 2003, the U.S. outlined its position to the IEC SC17B WG2 at a meeting in Brisbane, Australia. The U.S. stated that "The concept of 'Derived TSEs' is technically inadequate because the components of 'Derived TSEs' are qualified to IEC Standards 60947-2, -3, -4-1, -4-2, and -4-3 and not to testing in accordance with the original IEC 60947-6-1 that is much more severe because of the special nature of transfer applications."

To support its position, the U.S. offered several supporting technical arguments, including:

- Tests for D/T devices are different than those for S/T devices.
- Tests must prove source separation is maintained.
- Voltage across TSE contacts can be 2X that across S/T contacts.
- Rapid arc interruption is important for TSEs, not important for S/T devices.
- Entire TSE must be subjected to dielectric test; this is impossible with "derived TSE."

The U.S. also argued that TSEs consist of power switching contacts and control logic and many other components and are designed, manufactured and tested to function as a single system that must safely and reliably transfer critical electrical loads during emergency conditions. All of the components are crucial to the safe and reliable operation of the TSE. Up until now, said the U.S., IEC 60947-6-1 required that the TSE be tested as a complete system because it is not possible to verify the integrity of the entire TSE by testing the components separately.

Since all of the components of the TSE are in close proximity to each other, and are even usually enclosed inside a single metal cabinet, anything that happens to one of the components during operation can and usually does affect the other components.

"That's why all of the original requirements of 60947-6-1 are that the TSE be tested together as a system," said Pukash, "in order to verify the integrity of the entire TSE during the testing."

"The power switching operation can affect other components such as wiring and logic controls," said Pukash. During power switching, the opening and closing of the normal source poles must not affect the emergency source poles. Therefore it is not possible to test individual components separately with any assurance or technical

justification that such testing verifies that those components can successfully meet all of the test requirements of the TSE as a complete system.

The U.S. went on to argue that the load switching environment of TSEs is reflected in the test requirements of 60947-6-1, which go beyond the required tests of other 60947 standards. This is because the physics of switching loads between two live and unsynchronized power sources, said Pukash, is significantly different than those of load connecting and disconnecting as covered by the other 60947 standards.

In summarizing his presentation, Pukash said "the introduction of a 'Derived Transfer Switch' category to IEC 60947-6-1 does not have technical merit. However, since international markets have been de facto accepting 'Derived Transfer Switches' for the more than 20 years that 60947-6-1 has existed, the change to the standard merely legitimizes what has been common practice outside of North America."

As a result, he noted, the real impact of the changes proposed to 60947-6-1 remain unclear. The U.S. Transfer Switch Industry, he added, must educate Authorities Having Jurisdiction (AHJs) and state and local governments about the inadequacies of the newly revised 60947-6-1.

Postscript from Stan Pukash

The technical information and issues mentioned in this article are correct. However, the IEC overrode the U.S. National Committee's opposition to the so-called "derived transfer switch" and they formally adopted the addition of that change to IEC Standard 60947-6-1.

Perhaps now more than ever the message in this article must be brought to the attention of "Authorities Having Jurisdiction" throughout the U.S. (and other conscientious jurisdictions around the world). Even though it has now been formally adopted by the IEC, the concept of "derived transfer switches" (or "derived anything" for that matter) has no technical justification, especially when a straight-forward, simple set of qualification tests will prove suitability of the product without having to use "judgment." ■

Applying Reciprocating Engines for a Successful CHP Strategy

by Louis Braquet, P.E., CEM

Editor's Note: This article was first published as part of a series starting in 2003 to provide practical information for evaluating, sizing, designing and applying reciprocating engines in combined heat and power (CHP) systems. It has been updated here to address recent developments and conditions that affect CHP applications.

It's all too familiar: contact most any mechanical/electrical (M/E) engineering firm and mention reciprocating engine (recip) and they'll immediately start talking diesel standby systems. Even after you make it a point to stress natural gas (N.G.) reciprocating engines, the discussion will still focus on emergency power systems. Don't be surprised when you ask about heat recovery that the subjects of dump radiators and jacket and lube oil coolers enter the conversation. And should you ask about utility paralleling switchgear, the options will likely focus on open or closed transition transfer switches. It is no wonder that most energy consultants talk the emergency diesel recip language, since those systems have historically made up almost all of the U.S. market for reciprocating power systems.

Anticipating the same response, mention cogeneration or CHP (combined heat and power) systems and the energy consultant will likely pull out his gas turbine application notes. As a matter of fact, the majority of M/E firms still talk diesel (recip) for standby and gas turbines for CHP. If you make a point of calling to their attention the fact that recip engines have been used in prime duty power applications for years and that many of the newer peaking capacity generation stations deploy recip technology, they'll likely agree and still ask something like "So, how large a diesel genset are you looking for?"

The fact is that, while diesel gen-sets are the most widely used choice for emergency/site standby power systems, recent advances in natural gas (N.G.) recip technology make them ideal candidates for most small (<5 mW) CHP systems where higher pressure steam (i.e. > 200 psig) is not the only thermal requirement. In fact, depending on a site's thermal consideration and load factors, N.G. engines can typically out-perform gas turbines in projects exceeding 10 mW. When combined with new heat recovery boiler technology, recip CHP systems can easily supply most of a site's thermal needs up to about 200 psig saturated steam. The new natural gas recips are more efficient, more environmentally compatible, more reliable, and offer more attractive cost-power densities ($/kW) than anything that was available even a few years back.

All the major U.S. engine manufacturers are advertising the opportunities to use their engines for cogeneration and some are even offering supportive programs to help lay out systems, from utility interconnection to exhaust heat recovery options. Even so, the engineering and economics of selecting a complete recip engine CHP system remain rather vague and intimidating. Even for veteran cogen firms that have experience in applying smaller gas turbine based CHP facilities, the concept of evaluating a recip engine alternative rarely enters their options. They continue to try and make a small gas turbine work in projects under 5 mW where the facility has no real need for lots of high pressure steam and can get by with some 75 psig steam and a bunch of hot water (or even higher pressure steam boiler feed and make-up water pre-heating energy).

Where We Are Today

While PURPA in 1978 paved the way for viable cogeneration projects, the vast majority of projects over the following 20 years involved large industrial power projects (>20 mW) using large gas and steam turbine prime movers, or projects with a free fuel or waste heat source, or projects subsidized with special funding from government, research, or utility programs. In the smaller projects (<10 mW), applications tended to be more focused on power reliability issues and not necessarily on energy investment economics.

In fact, even today with all the hype about distributed generation (DG) projects, most energy engineers continue to think gas turbines for cogeneration and diesel recips for emergency power systems. In reality, the widespread use of N.G. recip engine technology in the smaller sized CHP market has not even begun to scratch the surface of the actual potential in this country, although much more headway has been seen in Europe, China, and the East in recent years. With limited energy supplies in demand and global energy prices continuing to escalate, CHP will be a primary method to cost effectively utilize energy at an industrial or heavy commercial site.

Leading factors promoting smaller sized CHP in today's marketplace go well beyond the federal PURPA machines of the 1980s. The current recip CHP markets have the following key attributes:

- Highly reliable, proven engine technologies based on decades of performance and enhancement.
- Readily available service and parts with most major U.S. suppliers offering direct OEM warranty and ongoing service at very competitive rates.
- Less costly engine gen-sets on a $/kW basis.
- Advanced digital control technologies enabling multiple gen-set utility interconnection and paralleling, load control, and demand interface with preferential circuit supply during utility outages.
- More fuel efficient engines (some smaller engines are now in excess of 40% LHV electric conversion efficiency) with larger machines and 'ARES' (i.e. DOE's 'Advanced Reciprocating Engine Systems') technologies promising even better performance in the near future!
- Cost effective, reliable and efficient heat recovery systems with supplemental fire options to produce abundant hot water and most steam supply needs less than 200 psig.
- Significantly reduced environmental emissions (i.e. < 0.5 gr/bhp-hr), with N.G. engines typically able to meet most local compliance specs without costly remediation equipment.
- An energy marketplace with considerably higher energy costs (both electric and boiler fuel!) than a few years ago.
- A financial environment with relatively cheap finance rates as compared to

historic norms, which significantly improves the pro forma sheets on these projects.

- Considerably better acceptance by utilities for interconnection and paralleling operations with many locations now accepting nationally standardized interconnection criteria. The passage of the 2005 Energy Policy Act further supports CHP and DG interconnection and cost effective operations with options such as net metering, where sites can get maximum value for site generated power.
- The widespread use of N.G. recip engine technology in the smaller sized CHP market has not even begun to scratch the surface of the actual potential. Typical prime application sites include smaller industrial plants and those with <200 psig steam needs, universities, hospitals, institutional and military installations, commercial/retail malls, and many large resort/casino complexes.
- Considering the 9-11 event, the recent catastrophic hurricanes, and the new national security emergency operations standards, many facilities find that they must expand and enhance their emergency power systems to accommodate more capacity, better reliability, as well as longer duration running capabilities. As an added benefit, the CHP option provides enhanced energy cost savings when the need for a reliable source of On-Site (emergency) Power is desired for these types of installations.

When all factors are placed on the table and a smaller gas engine project is evaluated, the numbers look considerably better than they did in the late 1990's. While simple paybacks under three years are possible, it is quite common to locate projects paybacks of five to seven years. If a low-cost financing package can be incorporated into the project, the economics and viabilities generally look even better. If a facility is looking to expand and/or enhance its emergency (power) operations anyway, the CHP approach looks even better! The bottom line is that recip engine technology should always be evaluated before selecting prime movers for any cogeneration project under 10 mW. ■

About the Author

Louis J. Braquet, PE, CEM is a regular contributor to *Powerline* magazine. He has over 25 years professional experience in the energy business and currently serves as Principal Consultant with LB Services, LLC, a Louisiana based energy, power and utility consulting firm (on the web at *www.LBServices.net*). He may be contacted at 504-443-3931 or 504-443-3185 or via e-mail at *Louis@LBServices.net.*

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Exciting news from EGSA
As part of its commitment to advancing professionalism within the On-Site Power industry, EGSA is proud to announce it has created the Electrical Generator Systems Technician Certification Program.

Why certification?
Professional certification has become the hallmark of nearly every industry in the United States today. A wide range of professions—from the practice of law to construction to auto repair to nursing—embrace certification for one simple reason: It helps advance the profession. Certification gives you a broader picture of how your employees should be performing and motivates them to enhance their skills and knowledge. It even helps you evaluate potential new hires.

Qualified, certified personnel
Today's technology is becoming increasingly complex; end-users—your customers—want to be assured that qualified, certified personnel are installing and maintaining their equipment. Your suppliers, likewise, want the assurance that maintenance and repairs are being performed by skilled technicians to guard against unnecessary returns or warranty repairs. Actively promoting certification to your technicians sends a message to those with whom you do business; it signifies your commitment to the highest of standards when it comes to the maintenance and repair of On-Site Power equipment.

Through rigorous testing, the program identifies generator technicians who have attained sufficient levels of skill, knowledge, and expertise to demonstrate proficiency in various aspects of generator set and On-Site Power generation systems maintenance and repair. Technicians who pass the test can proudly use the title "EGSA Certified Electrical Generator Systems Technician."

How does it benefit you?
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After two years of study and preparation, the EGSA Electrical Generator Systems Technician Certification Program is finally a reality. As our members have said, "We have seen too many back-yard mechanics damage expensive equipment. This program will provide credibility for my company and will help build pride and a commitment from technicians to be the best." Check our website (*www.egsa.org*) for details about the program. If you have a specific question, contact EGSA Director of Education George Rowley at 561-750-5575 ext. 210 or via email at *g.rowley@egsa.org*.

Testing covers:

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- Troubleshooting System Problems
- Auxiliary Support Systems

About EGSA

EGSA is an international trade association whose members and interests span the globe. We are the world's largest association dedicated to serving the interests and needs of the On-Site Power industry.

EGSA was founded in 1965 by a half-dozen firms located in the Midwestern United States. Today, the Association has nearly 500 member firms. These manufacturers, manufacturer's representatives, distributor/dealers, energy management companies, engineers, end-users, service companies and others all have an active interest in On-Site Power generation. EGSA provides a wide range of services to meet the needs of its members and to benefit the On-Site Power industry as a whole.

To learn more about EGSA, visit us online at *www.egsa.org* or call our International Headquarters at (561) 750-5575.

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Looking to fill a position within your company? ESGA will publish, free of charge, EGSA Members' job openings and—space permitting—some of the applications submitted to the Job Bank.

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Application for Membership

ELECTRICAL GENERATING SYSTEMS ASSOCIATION

1650 South Dixie Highway, Suite 500, Boca Raton, FL 33432 • (561) 750-5575 • FAX (561) 395-8557
E-Mail: *e-mail@egsa.org* • World Wide Web: *www.egsa.org*

EGSA's mission is to bring together representatives of the various segments of the On-Site Power Industry, to learn, share ideas and experiences, advance the science of On-Site Power generation, improve performance and profitability of members, and the quality of service to power users.

Please type or print all information in upper and lower case (NOT ALL CAPS!)

1. Contact Information

Company _____

Address _____

City _____ State/Province _____

Zip/Postal Code _____ Country _____

Phone _____ FAX _____

Official Representative _____ Title _____

Representative's E-Mail _____ Company's Web Address _____

Are you interested in receiving ordering information for EGSA apparel? ❑ Yes ❑ No

2. Member Classification

Read the Membership classifications below and check the box that describes your firm's classification.

I. FULL MEMBERSHIP

❑ MF **Manufacturer Membership**
Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria:
1. They manufacture prime movers for power generation.
2. They manufacture generators or other power conversion devices producing electricity.
3. They manufacture switchgear or electrical control devices.
4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
5. They are a wholly owned subsidiary of a firm which qualifies under rule one through four.

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❑ MR **Manufacturer's Representative Membership**
Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.

❑ EM **Energy Management Company Membership**
Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.

❑ **Associate Full Membership** (mark appropriate category at right)]
Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at the existing non-manufacturers' Full Member rates.

II. ASSOCIATE REGULAR MEMBERSHIP

❑ AA **Trade Publication Membership**
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership—Trade Publications.

❑ AB **Trade Association Membership**
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Any consulting or specifying engineer may apply for Associate Membership—Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.

❑ AD **End-User Membership**
Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership—User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.

❑ AE **Service Membership**
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership—Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.

❑ AG **Educational Institution Membership**
Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership-Education Institution.

❑ AR **Retiree Membership**
Any individual who retires from a member company may apply for Associate Membership—Retired. This classification does not apply to any individual who is employed more than 20 hours per week.

❑ AF **Student Membership**
Any individual currently enrolled at an academic institution may apply for Associate Membership—Student.

FOR BOARD OF DIRECTORS USE ONLY

❑ YES ❑ NO Date: _____

Name (Print) _____

Signature _____

FOR OFFICE USE ONLY

Amount Paid $ _____ Check Number _____

Date Received _____ Date Processed _____

Mentor Assigned Committee Interest

Dues Schedule (Use for Section 3)

	Annual Dues	Membership Fee	TOTAL
Manufacturer	$800	~~$200~~	$800
Energy Management Companies	$800	~~$200~~	$800
Distributor/Dealer	$275	~~$100~~	$275
Manufacturer's Rep	$275	~~$100~~	$275
Regular Associate Member	$195	~~$100~~	$195
Full Associate Member	$275	~~$100~~	$275
Retiree Member	$85	~~$0~~	$85
Student Member	*Complimentary*	~~$0~~	$0

Initiation Fee is Waived Through 2/28/06!

NOTE: A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.

3. Membership Dues (Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues $_____

Membership Plaque (optional)** $ 39.95**

On-Site Power Generation: A Reference Book (optional)** $ 95.00**

Florida Residents: Add 6.5% Sales Tax to ** items $_____**

*Continental US Residents add $5 shipping/handing to**items.* $_____

*Non Continental US Residents should call EGSA Headquarters for shipping charges for **items.*

TOTAL $_____

4. Payment Method (Payable in US$ drawn on U.S. bank, U.S. Money Order, or American Express)

❑ Check #_____ Amount $ _____

❑ Money Order

❑ Mastercard ❑ Visa ❑ American Express

Card # _____ Exp. Date _____

Signature: _____

Print Name: _____

5. Products/Services

Please describe the nature of your business (50 words or less, NOT ALL CAPS) If you are a Manufacturer's Representative or Distributor, please indicate which manufacturers you represent and/or distribute for:

_____

_____

_____

_____

_____

Available Codes:

01 ---Batteries/Battery Chargers
02 ---Control/Annunciator Systems
04 ---Enclosures, Generator Set
05 ---Engines, Diesel or Gas
06 ---Engines, Gas Turbine
07 ---Engine Starters/Starting Aids
08 ---Filters, Lube Oil, Fuel or Air
28 ---Fuel Cells
03 ---Fuel Tanks and Fuel Storage Systems
09 ---Generator Laminations
10 ---Generator Sets
11 ---Generators/Alternators
12 ---Governors
13 ---Heat Recovery Systems
14 ---Instruments and controls, including meters, gauges, relays, contactors, or switches
15 ---Load Banks
16 ---Motor Generator Sets
17 ---Radiator/Heat Exchangers
18 ---Relays, Protective or Synchronizing
19 ---Silencers/Exhaust Systems/Noise Abatement
20 ---Solenoids
21 ---Swtichgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels
22 ---Trailers, Generator Set
23 ---Transformers
24 ---Uninterruptible Power Supplies
25 ---Vibration Isolators
26 ---Voltage Regulators
27 ---Wiring Devices or Receptacles

Enter codes here:

Products sold: _____

_____

Products rented: _____

_____

Products serviced: _____

_____

Do you buy AND sell equipment? ❑ Yes ❑ No Do you manufacture packaged equipment? ❑ Yes ❑ No

6. Sponsor(s)

: A"Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name _____ Company Name _____

7. Official Representative's Authorization

Signature _____ Date _____

Industry and Association News

Zenthoefer Named Sales Director

MIRATECH Corporation, a leading manufacturer of emission solutions for industrial, reciprocating engines, has named David Zenthoefer its Sales Director. Zenthoefer will direct the company's sales activities and supervise the company's regional sales management team, inside sales force and North American independent representative and distributor organizations.

Prior to joining MIRATECH, Zenthoefer was southern California Director of Sales for Hilti, Inc., a privately held manufacturer and distributor of construction equipment and materials. He is a graduate of the University of Tulsa with both a B.S. and Masters degrees in Business Administration. For more information, visit *www.miratechcorp.com*

Long-time EGSA Member Vali Vivi Dies at 75

It is with great sadness that we report the passing of Vali Vivi, longtime EGSA member and president of V-V & Associates, Inc. He was born July 12, 1931. He passed away January 5, 2006 of Leukemia. He is survived by his wife, Sheila, and other family.

Funeral services were held Tuesday, January 10, at St. Benedict's Catholic Church in Crystal River, FL, followed by a graveside memorial at Florida National Cemetery in Bushnell. In lieu of flowers, the family requested that donations be made to the Leukemia Foundation.

Correction

Cleveland-based Avtron Mfg Inc. was inadvertently omitted from the list of companies exhibiting within the EGSA Fall Conference Manufacturers Showcase on page 22 of the November/December issue of *Powerline*. Avtron was located at table #27. We greatly appreciate Avtron's continued support of the Association.

GE Energy to Acquire Altair

GE Energy has announced it has signed an agreement to acquire UK-based Altair Filter Technology Group Limited, a leading provider of inlet filtration solutions for the power generation, oil and gas and marine industries. The transaction is expected to close at the beginning of February. For information, visit *www.ge.com/energy.*

EGSA Contributes to Katrina Rebuilding Efforts

The EGSA Board of Directors has recently made a sizable donation to Habitat for Humanity earmarked for work currently being done to rebuild devastated communities in the Louisiana and Mississippi Gulf Coast regions.

The donation, said Executive Director Jalane Kellough, was made at the suggestion of many EGSA members. ■

EGSA New Members

Advanced Mfg. & Power Systems . . . . . .MF
1965 Bennett Dr
DeLand, FL 32724-1928
(386) 822-5565 (386) 822-9669 Fax
Randy Weimer, Vice President
www.amps.cc
Business: Professional packager of generator sets, compressors and pump packages for engine distributors worldwide. Producer of UL listed fuel base tanks, steel & aluminum sound attenuated enclosures, container packages and DOT trailers for all applications. Testing of generator sets to 4MW. AMPS' in house engineers can assist with any application.

Argillon, LLC . . . . . .MF
5895 Shiloh Rd, Ste 101
Alpharetta, GA 30005
(678) 341-7535 (678) 341-7509 Fax
Elliott Smith, National Sales Manager
www.sinox.com
Business: As a leading OEM of Catalyst and NOx control equipment, Argillon provides nearly two decades of globally applied emissions control and SCR Catalyst Systems experience for Combustion Turbine, Coal, and Internal Combustion Engine Power Systems. Other business segments include emissions treatment for Marine, Mobile, and Greenhouse applications.

Ascent Power LLC. . . . . .DD
9643 Olive Blvd
St. Louis, MO 63132
(314) 989-1011 (314) 989-1122 Fax
Bob Clark, Vice President
www.ascentpowerllc.com
Business: Ascent Power LLC provides the equipment necessary to deliver on-site conditioned, reliable power generation and the maintenance services necessary to ensure the equipment is operable when needed. Ascent's 24/7 Operations Center monitors critical alarms and is available to dispatch technicians when emergencies arise.

Caribbean Powergen Solutions, Corp. . . . . .DD
PO Box 6993, Santa Rosa Unit
Bayamon, PR 00960
(787) 779-8473 (787) 779-8414 Fax
Samuel Barquero, President
www.caribbeanpowergen.com
Business: We install and service LP gas & diesel generators.

Emergency Power Services . . .DD
19090 NE 4th Ct
Miami, FL 33179
(305) 999-0939 (305) 999-0938 Fax
Gloria Romero, General Manager
www.epspower.com
Business: EPS Sells, repairs, installs and maintains generators.

Hal Burns Power Systems . . . .DD
14 Camino Charro
Santa Fe, NM 87507
(505) 471-1671 (505) 471-4759 Fax
Rob Salin, GM Generators
www.halburnspowersystems.com
Business: We provide service, sales, and maintenance on fixed facility, communication sites, industrial back-up, ATP service in Northern New Mexico.

Isuzu Diesel Midwest . . . . . .DD
3141 39th St SW
Fargo, ND 58104
(701) 282-7915 (701) 282-2472 Fax
Joel Kuhl, Vice President
Business: We are an Isuzu Diesel, Lombardini Diesel engine distributor as well as Marathon Electric dealer. We sell to OEM/Manufacturing companies in a 5 state area. We also sell many solutions for the generator market.

On Sight Energy, LLC . . . . . .DD
3249 E Bruce Dr
Dresher, PA 19025
(215) 657-5213 (215) 657-5214 Fax
Richard Diloia, Vice President, Business Development
www.onsightenergy.com
Business: Standby & Prime Power Diesel & Gas Generators; Bi Fuel Conversion Technology; Switchgear; Automatic Transfer Switches

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Power Control People You Can Rely On

Codes & Standards Surveillance

Continued from page 10

veillance meeting in Williamsburg, EGSA member Bob Apuzzo shared the fact that New York City has passed a new Environments Code after checking the air quality due to the World Trade Center attack. The new code requires the use of Ultra Low Sulfur Diesel Fuel and requires measurement of emissions. Interestingly, almost all of the measurements in New York City in 2001, 2003 and 2005 are below the requirements of the National Air Quality Standards. There was a concern that these standards in New York City might be adopted by other cities. I have a copy of the new code for review. If you'd like a copy, you can either contact me or email Bob at *bapuzzo@multiquip.com*.

Another item that was brought up at the Codes and Standards meeting was that the South Coast Air Quality Board of California wants all generating sets in its territory to have continuous emissions monitoring equipment. This equipment on standby generator sets is expensive and not very accurate since the engines and monitoring equipment do not work very well until they reach equilibrium operating temperature.

I received an "Analysis of Portable and Vehicle-Mounted Generators with and without GFCI Protection" by Walter Skuggevig of Underwriters Laboratory. This has to do with the UL Standard we worked on earlier for Portable Generator Sets. If any member wants a copy for review, let me know and I will be happy to send it to you.

I received a 51-page document that has all the comments received by UL concerning UL 2200 Stationary Engine Generator Set Assemblies and the UL response to those comments. The UL Standards Technical Panel, of which I am a member, will meet and review these comments early in 2006. If anyone is interested in seeing this document, please contact me.

The following have been recently published:

- IEC 62040-2 Ed.2.0 (2005-10) *Preview Uninterruptible Power Systems (UPS) –Part 2. Electromagnetic compatibility (EMC) requirements.*
- IEC 60076 –SER.Ed.1.0 (2005-10) *Power Transformers – All Parts* ■

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- **Compatibility:** The CASCADE works with three speed signals: MPU, AC Frequency and ECU. It can also operate with standard and J1939 engines.
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